

## ***AMENDMENT***

Please replace all prior versions and listings of the claims with the following Listing of Claims.

### ***Listing of Claims***

1. **(Original)** A burst detection system for detecting a burst in an incoming signal comprising:

a signal strength change detector for determining strength changes in the incoming signal;

signal strength detection logic for determining if a change in signal strength of a predetermined magnitude has occurred;

a pattern detector for monitoring patterns of symbols in the incoming signal to determine if a predetermined pattern is present; and

a burst detector for signaling a detection of a burst if the signal strength change detection logic determines that a signal strength change of predetermined magnitude has occurred and the pattern detector determines that a predetermined pattern of symbols is present.

2. **(Original)** The burst detection system of claim 1 wherein the signal strength change detector is a power change detector.

3. **(Original)** The burst detection system of claim 1 further comprising a signal strength indicator for indicating the strength of the incoming signal.

4. **(Original)** The burst detection system of claim 3 further comprising a short-term signal strength change detector for determining, responsive to the signal strength indicator, short-term changes in signal strength, and a long-term signal strength change indicator for determining, responsive to the signal strength indicator, longterm changes in signal strength.

5. **(Original)** The burst detection system of claim 4 wherein the signal strength detection logic is configured to determine, responsive to the short-term and long-term signal strength change detectors, if a short-term change in signal strength of a predetermined magnitude has occurred, and a long-term change in signal strength of a predetermined magnitude has occurred.
6. **(Original)** The burst detection system of claim 5 wherein the burst detector is configured to indicate the detection of a burst if the signal strength detection logic determines that a short-term change in signal strength of sufficient magnitude has occurred, and that a long-term change in signal strength of sufficient magnitude has occurred, and the pattern detector determines that a predetermined pattern of symbols is present in the incoming signal.
7. **(Original)** A burst detection system for detecting a burst in an incoming signal comprising:
- a short-term signal strength change detector for determining short-term signal strength changes in the incoming signal;
  - a long-term signal strength change detector for determining long-term signal strength changes in the incoming signal;
  - signal strength change detection logic for determining if a short-term change in signal strength of predetermined magnitude has occurred, and a long-term change of signal strength of predetermined magnitude has occurred;
  - a pattern detector for monitoring patterns of symbols in the incoming signal to determine if a predetermined pattern is present; and
  - a burst detector for signaling a detection of a burst if the signal strength change detection logic determines that a short-term signal strength change of predetermined magnitude has occurred, and that a long-term signal strength change of predetermined magnitude has occurred, and the pattern detector signals that a predetermined pattern of symbols is present.

8. **(Original)** The system of claim 5 further comprising a symbol detector for detecting symbols, or estimates thereof, in the incoming signal, and the pattern detector monitors the symbols or estimates provided by the symbol detector to determine if a predetermined pattern of symbols is present.

9. **(Original)** The system of claim 5 further comprising a signal strength indicator for indicating the strength of the incoming signal, and the short-term and long-term signal strength change detectors respectively determine short-term and long-term changes in signal strength responsive to the indication of signal strength provided by the signal strength indicator.

10. **(Original)** The system of claim 9 wherein the short-term signal strength change detector is configured to determine  $A_n$ , a current moving average of  $M$  samples of  $a_n$ , the indication of signal strength provided by the signal strength indicator, and  $B_n$ , a previous moving average of  $M$  samples of  $a_n$ , where  $M$  is a non-negative integer.

11. **(Original)** The system of claim 10 wherein the signal strength change detection logic is configured to determine if a short-term change in signal strength of sufficient magnitude has occurred by determining if the ratio of  $A_n$  to  $B_n$  exceeds a predetermined threshold.

12. **(Original)** The system of claim 10 wherein the short-term signal strength change detector is configured to determine  $C_n$ , a long-term average of  $a_n$ , in accordance with the following expression:  $C_n = (1-\alpha) \cdot C_{n-1} + a_n$ , where  $\alpha$  is less than or equal to 1, and indicates the relative weights to be given to  $C_{n-1}$  and  $a_n$  in the computation of  $C_n$ .

13. **(Original)** The system of claim 12 wherein the signal strength change detection logic is configured to determine if a change in signal strength of predetermined magnitude has occurred by determining if the ratio of  $A_n$  to  $C_n$  exceeds a predetermined magnitude.

14. **(Original)** The system of claim 8 wherein the incoming signal is a quadrature baseband signal, and the symbol detector determines soft estimates  $\delta\theta_n$  of the symbols.

15. **(Original)** The system of claim 14 further comprising a symbol spaced differentiator for determining, responsive to the samples  $\delta\theta_n$  from the symbol detector,  $\delta\delta\theta_n = \delta\theta_n - \delta\theta_{n-L}$  where L is the number of samples/symbol.

16. **(Original)** The system of claim 15 wherein the pattern detector determines if a predetermined pattern of symbols is present responsive to the values  $\delta\delta\theta_n$  from the symbol spaced differentiator.

17. **(Original)** A system for recovering data from an incoming packet represented by an incoming signal, the packet having a preamble and a body, comprising:

- a short-term signal strength change detector for determining short-term signal strength changes in a portion of the incoming signal representing the packet preamble;

- a long-term signal strength change detector for determining long-term signal strength changes in the portion of the incoming signal representing the packet preamble;

- signal strength change detection logic for determining if a short-term change in signal strength of predetermined magnitude has occurred, and a long-term change of signal strength of predetermined magnitude has occurred;

- a pattern detector for monitoring patterns of symbols in the portion of the incoming signal representing the packet preamble to determine if a predetermined pattern is present;

- a burst detector for signaling a detection of a burst if the signal strength change detection logic determines that a short-term signal strength change of predetermined magnitude has occurred, and that a long-term signal strength change of predetermined magnitude has occurred, and the pattern detector signals that a predetermined pattern

of symbols is present; and

data recovery logic for recovering data in the body of the packet responsive to the detection of a burst by the burst detector.

18. **(Original)** The system of claim 17 wherein the data recovery logic includes timing and frequency acquisition circuitry.

19. **(Original)** The system of claim 18 wherein the data recovery logic further includes demodulation circuitry.

20. **(Original)** A burst detection system for detecting a burst in an incoming signal comprising:

signal strength change detection means for determining strength changes in the incoming signal;

signal strength detection means for determining if a change in signal strength of a predetermined magnitude has occurred;

pattern detection means for monitoring patterns of symbols in the incoming signal to determine if a predetermined pattern is present; and

burst detection means for signaling a detection of a burst if the signal strength change detection logic determines that a signal strength change of predetermined magnitude has occurred and the pattern detector determines that a predetermined pattern of symbols is present.

21. **(Original)** A method for detecting a burst in an incoming signal comprising:

monitoring strength changes in the incoming signal to determine if a change in signal strength of a predetermined magnitude has occurred;

monitoring, in parallel with the previous monitoring step, patterns of symbols in the incoming signal to determine if a predetermined pattern is present; and

signaling detection of a burst if a signal strength change of predetermined magnitude has occurred and a predetermined pattern of symbols is present.

22. **(Original)** The method of claim 21 further comprising indicating the strength of the incoming signal, and monitoring strength changes in the incoming signal responsive thereto.

23. **(Original)** The method of claim 22 further comprising monitoring, responsive to the signal strength indication, short-term changes in signal strength, and long-term changes in signal strength.

24. **(Original)** The method of claim 23 further comprising determining if a short-term change in signal strength of a predetermined magnitude has occurred, and a long-term change in signal strength of a predetermined magnitude has occurred.

25. **(Original)** The method of claim 24 further comprising detecting a burst if a short term change in signal strength of sufficient magnitude has occurred, a long-term change in signal strength of sufficient magnitude has occurred, and a predetermined pattern of symbols is present in the incoming signal.

26. **(Original)** A method for detecting a burst in an incoming signal comprising:

monitoring short-term signal strength changes in the incoming signal to 10 determine if a short-term change in signal strength of predetermined magnitude has occurred;

monitoring long-term signal strength changes in the incoming signal to determine if a long-term change in signal strength of predetermined magnitude has occurred;

monitoring patterns of symbols in the incoming signal to determine if a predetermined pattern is present;

performing the foregoing three monitoring steps in parallel; and

signaling detection of a burst if a short-term signal strength change of predetermined magnitude has occurred, a long-term signal strength change of predetermined magnitude has occurred, and a predetermined pattern of symbols is

present.

27. **(Original)** The method of claim 26 further comprising detecting symbols, or estimates thereof, in the incoming signal, and monitoring the symbols or estimates to determine if a predetermined pattern of symbols is present.

28. **(Original)** The method of claim 26 further comprising indicating the strength of the incoming signal, and monitoring short-term and long-term changes in signal strength responsive to the indication of signal strength.

29. **(Original)** The method of claim 28 further comprising determining  $A_n$ , a current moving average of  $M$  samples of  $a_n$ , the indication of signal strength, and  $B_n$ , a previous moving average of  $M$  samples of  $a_n$ , where  $M$  is a non-negative integer.

30. **(Original)** The method of claim 29 further comprising determining if a short-term change in signal strength of sufficient magnitude has occurred by determining if the ratio of  $A_n$  to  $B_n$  exceeds a predetermined threshold.

31. **(Original)** The method of claim 29 further comprising determining  $C_n$ , a long-term average of  $a_n$ , in accordance with the following expression:  $C_n = (1-\alpha) \cdot C_{n-1} + \alpha \cdot a_n$ , where  $\alpha$  is less than or equal to 1, and indicates the relative weights to be given to  $C_{n-1}$  and  $a_n$  in the computation of  $C_n$ .

32. **(Original)** The method of claim 31 further comprising determining if a change in signal strength of predetermined magnitude has occurred by determining if the ratio of  $A_n$  to  $C_n$  exceeds a predetermined magnitude.

33. **(Original)** The method of claim 27 wherein the incoming signal is a quadrature baseband signal, and the method further comprises determining soft estimates  $\delta\theta_n$  of the symbols.

34. **(Original)** The method of claim 33 further comprising determining, responsive to the samples  $\delta\theta_n$ ,  $\delta\delta\theta_n = \delta\theta_n - \delta\theta_{n-L}$ , where L is the number of samples/symbol.

35. **(Original)** The method of claim 34 further comprising determining if a predetermined pattern of symbols is present responsive to the values  $\delta\delta\theta_n$ .

36. **(Original)** A method for recovering data from an incoming packet represented by an incoming signal, the packet having a preamble and a body, comprising:

monitoring short-term signal strength changes in a portion of the incoming signal representing the packet preamble to determine if a short-term change in signal strength of predetermined magnitude has occurred;

monitoring long-term signal strength changes in the portion of the incoming signal representing the packet preamble to determine if a long-term change in signal strength of predetermined magnitude has occurred;

monitoring patterns of symbols in the portion of the incoming signal representing the packet preamble to determine if a predetermined pattern is present;

performing the foregoing three monitoring steps in parallel;

signaling detection of a burst if a short-term signal strength change of predetermined magnitude has occurred, a long-term change in signal strength of predetermined magnitude has occurred, and a predetermined pattern of symbols is present; and

recovering data in the body of the packet responsive to detection of a burst.

37. **(Original)** The method of claim 36 further comprising acquiring timing and frequency responsive to detection of a burst.

38. **(Original)** The method of claim 37 further comprising demodulating the body of the packet responsive to detection of a burst.



39. **(Original)** A method for detecting a burst in an incoming signal comprising:
- a step for monitoring strength changes in the incoming signal to determine if a change in signal strength of a predetermined magnitude has occurred;
  - a step for monitoring patterns of symbols in the incoming signal to determine if a predetermined pattern is present; and
  - a step for signaling a detection of a burst if a signal strength change of predetermined magnitude has occurred and a predetermined pattern of symbols is present.
40. **(Currently Amended)** The method of claim 39 further comprising a step wherein the step for monitoring strength changes and the step for monitoring patterns of symbols are performed ~~for performing the first two monitoring steps~~ in parallel.
41. **(Original)** The systems of any of claims 1, 7, 17, or 20 in a wireless communications device.
42. **(Original)** Computer readable media tangibly embodying any of the methods of claims 21, 26, 36, or 39.